

1. An intra-oral camera for producing a picture of an intra-oral object wherein the intra-oral object may include a tooth of a dental patient, the intra-oral camera comprising:

5 a camera (44) operable by a user to take a picture of the intra-oral object once the user has oriented the camera in a proper picture taking position relative to the intra-oral object, the camera being operable to capture sight information relating to the intra-oral object;

a light source (48, 50) for irradiating the intra-oral object with a light beam; and

10 means (26) for indicating that the camera (44) has substantially assumed the proper picture taking position relative to the intra-oral object for the taking of a picture of the intra-oral object, the indicating means (26) being operable to evaluate at least one of sight information relating to the intra-oral object and light, captured by the camera (44), which  
15 comprises light coming from the intra-oral object in response to the irradiation thereof by the light source (48, 50) and to provide an indication that the camera (44) has substantially assumed the proper picture taking position relative to the intra-oral object based upon such evaluation.

20 2. A camera according to claim 1, wherein the light source (48, 50) is, preferably, a pinpoint light source and comprises at least one laser diode (204) that projects a light point onto the tooth of the dental patient and the camera (44) provides sight  
25 information relating to the light properties of the light coming from the intra-oral object in response to the irradiation thereof by the light point projected on the intra-oral object by the laser diode (204).

3. A camera according to claim 1, wherein the camera (44) comprises an optical axis (49) which extends through the objective of the camera and forms a light point in

the middle of the camera picture receipt region and the light source (48, 50) is oriented at an angle to the optical axis (49).

4. A camera according to claim 3, wherein the angled orientation of the light source (48, 50) relative to the optical axis (49) is such that, at a given spacing of the camera from the intra-oral object, the optical axis (49) coincides with or intersects the light point projected onto the intra-oral object from the light source (48, 50) and, in particular, intersects such centrally thereof.

5. A camera according to claim 1, wherein the light source comprises at least two laser diodes (204) which project light onto the intra-oral object and are, in particular, symmetrically oriented relative to one another.

6. A camera according to claim 2, wherein the indicating means (26) is operable to evaluate sight information relating to the light property of one of the laser diodes (204) and to indicate that the camera (44) has substantially assumed the proper picture taking position relative to the intra-oral object as soon as the camera has either been focused or has been properly aimed.

7. A camera according to claim 1, and further comprising means for permitting at least one of an automatic picture taking operation and a manually actuated picture taking operation in response to an indication that the camera (44) has substantially assumed, for a predetermined interval, the proper picture taking position relative to the intra-oral object.

8. A camera according to claim 1, wherein the indicating means (26) displays whether the camera (44) has been oriented relative to a selected selectively cropped camera frame portion relating to the sight information, whereby the selectively cropped camera frame portion overlays the light coming from the intra-oral object in response to the irradiation thereof by the light source (48, 50).

9. A camera according to claim 8, wherein the light source (48, 50) is a pinpoint light source that projects a light point onto the tooth of the dental patient and the selectively cropped camera frame portion is larger than the light point and, in particular, is approximately twice as large as the surface of the light point.

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10. A camera according to claim 6, wherein the indicating means (26) is operable to subdivide a selected selectively cropped camera frame portion relating to the sight information into subdivisions and to evaluate a raster formed by such subdivisions by comparing the light properties of various fields of the raster and thereby determine whether the camera (44) has substantially assumed the proper picture taking position relative to the intra-oral object.

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11. A camera according to claim 1, wherein the indicating means (26) is operable to subdivide a selected selectively cropped camera frame portion relating to the sight information into subdivisions, wherein the selectively cropped frame portion is, preferably, 10 times smaller than the sight information and, most preferably, 100 times smaller than the sight information and the indicating means (26) is preferably operable to subdivide the selected selectively cropped camera frame portion into a point symmetric number of subdivided fields collectively forming a raster mass and the indicating means (26) is operable to evaluate the raster mass by capturing and comparing with one another at least one of parameters and light properties of the various adjacent ones of the fields of the raster mass and to thereby determine whether the camera (44) has substantially assumed the proper picture taking position relative to the intra-oral object.

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12. A method for producing a picture of an intra-oral object wherein the intra-oral object may include a tooth of a dental patient, the method comprising:

orienting a camera (44) to take a picture of the intra-oral object, the camera being operable to capture sight information relating to the intra-oral object;

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optionally as needed, adjusting the orientation of a light source (48, 50) relative to the intra-oral object such that the intra-oral object will be irradiated by a light beam from the light source (48, 50) as the camera (44) is actuated to take a picture of the intra-oral object; and

5 indicating, in response to an evaluation of at least one of sight information relating to the intra-oral object and light, captured by the camera (44), which comprises light coming from the intra-oral object in response to the irradiation thereof by the light source (48, 50), that the camera (44) has substantially assumed a proper picture taking position relative to the  
10 intra-oral object for the taking of a picture of the intra-oral object.

13. A method according to claim 12, wherein the light source (48, 50) comprises at least one laser diode (204) and, preferably, two laser diodes (204), that project a light point onto the tooth of the dental patient and the step of indicating includes indicating  
15 that the camera (44) has substantially assumed a proper picture taking position relative to the intra-oral object for the taking of a picture of the intra-oral object based upon an evaluation of light, captured by the camera (44), which is formed of light coming from the intra-oral object in response to the irradiation thereof by the light point projected on the intra-oral object by the at least one laser diode (204).

20 14. A method according to claim 13, wherein the step of indicating includes evaluating sight information relating to the light property of one of the laser diodes (204) and indicating that the camera (44) has substantially assumed the proper picture taking position relative to the intra-oral object based upon the evaluation of sight  
25 information relating to the light property of one of the laser diodes (204) as soon as the camera, while it is being oriented during the step of orienting, has substantially assumed the proper picture taking position relative to the intra-oral object.

30 15. A method according to claim 12, and further comprising permitting at least one of an automatic picture taking operation and a manually actuated picture taking

operation in response to an indication that the camera (44) has substantially assumed, for a predetermined interval, the proper picture taking position relative to the intra-oral object.

5           16.    A method according to claim 13, wherein the step of indicating includes indicating whether the camera (44) has been oriented relative to a selected selectively cropped camera frame portion relating to the sight information, whereby the selectively cropped camera frame portion overlays the light coming from the intra-oral object in response to the irradiation thereof by the light source (48, 50).

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17.    A method according to claim 12, and further comprising:  
          subdividing a selected selectively cropped camera frame portion relating to the sight information into subdivisions, wherein the subdivisions form the fields of a raster,

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          thereafter indicating that the camera (44) has generally assumed a proper picture taking position relative to the intra-oral object,  
          thereafter comparing with one another the light properties of the various fields of the raster, and

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          thereafter indicating, via marking of the central fields of the raster, that the camera (44) has substantially assumed the proper picture taking position relative to the intra-oral object.